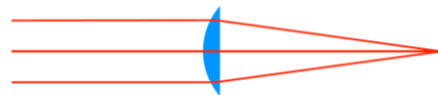




MegaWatt Lasers

KANE OE

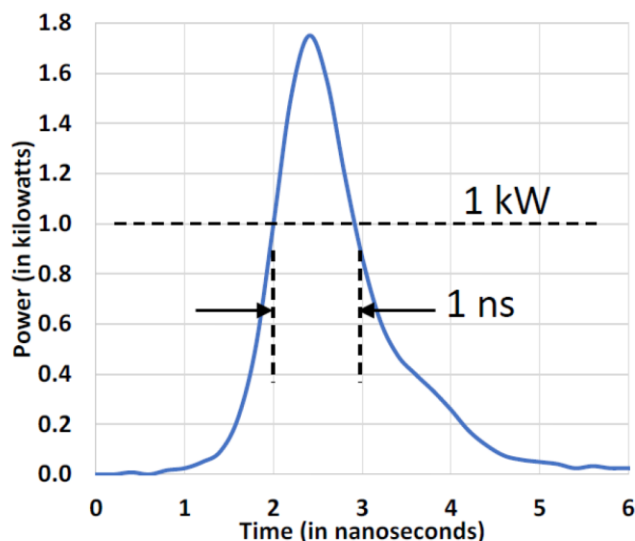


TK1 Passively Q-Switched 1.3 μ m Laser



Neodymium	
60	144.242
Nd	
[Xe] 4f ⁴ 6s ²	
181 pm	533.1 kJ·mol ⁻¹
3, 2, 1	7010 kg·m ⁻³
1.14	1024/3074 °C

- Optimized for >100m 3D imaging
- Superior to 1.5 μ m lasers in terms of eye safety, peak power, efficiency at high repetition rate
- Rugged mechanical construction
- Amenable to high volume manufacturing



Nd:YVO ₄	Preliminary results
Lasing Wavelength	1342 nm
Pulse Duration, FWHM	1 - 4 ns
Pulse Repetition Rate	~500 kHz
Pulse Energy	~2.5 μ J
Average Output Power	>1 W
Peak Power	~1 kW
Beam Quality	1.3 x D.L.

[2] Kane, T, "1.34 μ m Nd:YVO₄ laser passively q-switched by V:YAG and optimized for LIDAR," Proc. SPIE 11259, Solid State Lasers XXIX: Technology and Devices, 1125902 (2020).

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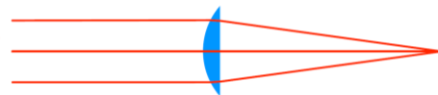
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MegaWatt Lasers

KANE OE

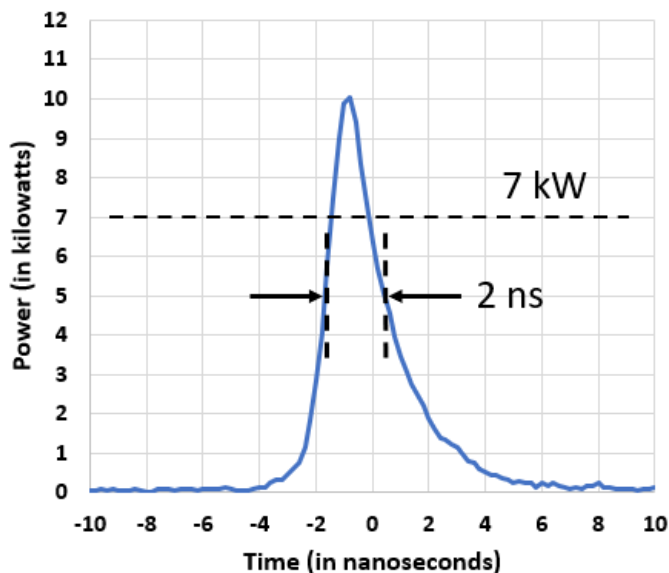


TK1 Passively Q-Switched 1.3 μ m Laser



Neodymium	
60	144.242
Nd	
[Xe] 4f ⁴ 6s ²	
181 pm	533.1 kJ·mol ⁻¹
3, 2, 1	7010 kg·m ⁻³
1.14	1024/3074 °C

- Optimized for longer distance remote sensing
- Superior to 1.5 μ m lasers in terms of eye safety, peak power, efficiency at high repetition rate
- Rugged mechanical construction
- Amenable to high volume manufacturing



Nd:YAG	Preliminary results
Lasing Wavelength	1319 nm, 1338 nm
Pulse Duration, FWHM	1 - 2 ns
Pulse Repetition Rate	~20 kHz
Pulse Energy	~20 μ J
Average Output Power	~0.4 W
Peak Power	~7 kW
Beam Quality	1.3 x D.L.

[1] Kane, T, "Eye-safe passively-q-switched lasers at 1.3 μ m with >1 W average power and nsec pulses," Proc. SPIE 12515, Laser Technology for Defense and Security XVIII, 1251513 (2023).

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